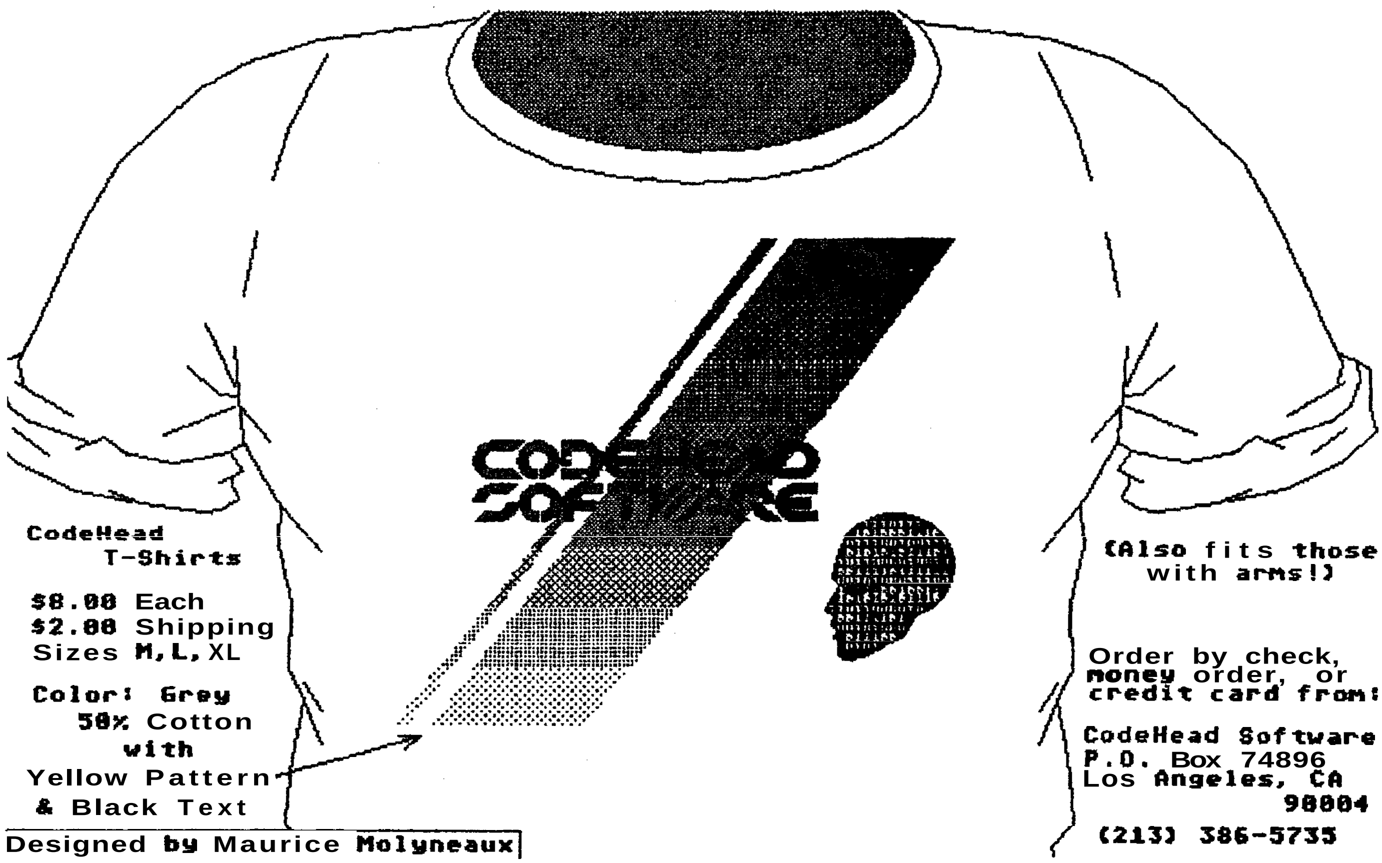
The LIAUG Lighthouse

The newsletter of the Long Island Atari User Group

August 1990
Volume 6 No 7



Long Island Atari User Group

P.O. Box 92
Islip, NY 11751
BBS Phone # (516) 221-8462

SUPER 3D PLOTTER II

By: R. Constan c 1985

★ ★ BEYOND BELIEF! ★ ★

If you have any interest in **30** computer **animation** and image design, get ready to watch your **so-called** "game machine" **out-perform** every **8-bit** machine on the market today! SUPER 3D PLOTTER **II** is a complete **3D** image design, **display**, and animation package for your **Atari** computer. Thanks to some **new** and very powerful **"natural"** algorithms **developed** by **Elfin** Magic, detailed **hi-res** images can be **rotated** and **maneuvered** at **an** amazing **projection rate of** 3 to 6 screens per **second! This** is the kind of **animation** that was considered impossible for **an Atari.** Believe it!! **THIS** PROGRAM ALLOWS MORE REAL **TIME** CONTROL THAN ***ANY* CURRENTLY AVAILABLE 3D SYSTEM FOR ANY-8 BIT** W H I N E. **SUPER 30 PLOTTER II also contains two full-featured,** memory-resident editors: Enter your images via numeric **data, or right** on the screen with a **joystick! Here** are just some of the truly amazing features of this package.

- **UNSURPASSED 3D PROJECTION SPEED**
- **TRUE HIDDEN SURFACE ELIMINATION AND SOLID (COLORFILL) PROJECTION.**
- **SUPER HI-RES PRINTOUT TURNS YOUR DOT-MATRIX PRINTER INTO A PEN PLOTTER!**
- **PRICE:** ONLY **$29.95**
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- **2 EXTENSIVE EDITORS, PACKED WITH UTILITIES, FOR ULTIMATE DESIGN FLEXIBILITY.**
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- **SCREEN "OVERLAY" AND "SAVE" FEATURES FOE INFINITE IMAGE EXTENSION, AND TOTAL COMPATIBILITY WITH MOST DRAWING PROGRAMS.**

Don't be fooled by the low price! This package **is** usable in professional 3D CAD. applications, and **this** ad does not permit space for a fair description! Send **S.A.S.E.** for **more** info, or send check or money order to:

Elfin Magic

23 Brook Place, E. Islip, NY 11730

FOR ALL 8-BIT ATARI COMPUTERS
WITH 48K AND DISK DRIVE.
PRINTER OPTIONAL



—SOFTWARE WITH IMAGINATION—

CIRCUIT DATABASE II

This is an enhanced version of the electronic circuit (SCHEMATIC) drawing program **i** presented in the Nov. 1984 issue of ANALOG Computing. This program allows easy design and editing of electronic circuits, and storage of up to 60 complete, labeled diagrams on a single side of a disk! This new version includes several added circuit symbols, plus a special "TEXT TO HI-RES" converter, which produces neat, *vertical* printouts on any dot-matrix graphics printer having a vertical printhead. The editor is so friendly, you can almost draw your circuits on screen faster than you could scribble them out with pencil and paper. And, it's written in plain, **listable Atari** BASIC, with full documentation on all machine language routines (USR calls), so you can use them in your **own** programs. **CIRCUIT DATABASE** II is a must for anyone concerned with the electronics field, from weekend hobbyist to professional. In fact, in today's world of fast-moving technology, it is almost unthinkable that you (or your children) will never be exposed to electronic circuits in some form. Now, you can be ready—and at a price you can't resist.

ONLY **$12.95!** **OR SEND S.A.S.E. FOR MORE** INFO AND SAMPLE PRINTOUTS!

LIAUG

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112 Page	20.00
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Directions to the library: From the Long Island Expressway: Take exit 58 North (Old Nichols Road). continue north for approximately two miles and make a left (west) turn onto Smithtown Blvd. Continue west for 1 112 miles to the Nesconset Plaza on the right hand side of the road. The library is located in the west end of the plaza.

From The Northern State Parkway: Take the Northern to the end where it continues east as Veterans Memorial/Nesconset Highway (routes 3471454). Go east approximately two miles and take the left fork (347). Continue for another three miles to Terry Road. Make a right turn onto Terry Road and take the left fork (approximately 314 mile) onto Smithtown Blvd. The library will be in the Nesconset Plaza on the left hand side approximately one mile from the fork. Meetings are open to all those interested at no charge. The meetings begin at 12:00 p.m. in the library's community room and end at 4:00 p.m.

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Club Correspondent	Terrence Madden
Int'l correspondent	Horst DeWitz
Newsletter Editor	Harvey Schoen
8 Bit Program Manager	Pat Mulvey
16 Bit Program Manager	Terrence Madden

Club Meetings

The Long Island Atari User Group Meets once a month at the Nesconset branch of the Smithtown Library. Membership dues are $20 per year and entitles you to receive the newsletter.

The newsletter is currently being produced on a Mega2 with 4mbytes memory and a 20mbyte hard drive. Software is Timeworks Desktop Publisher.

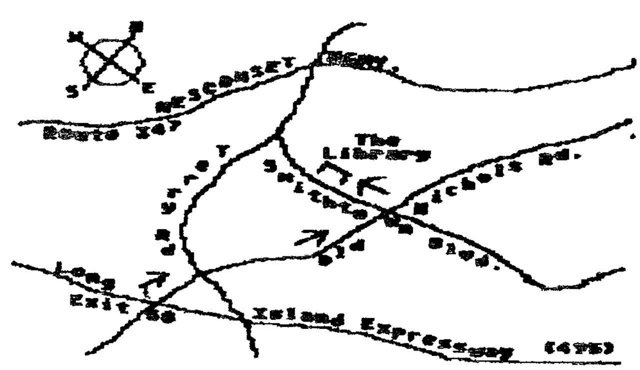
If you have any questions or comments about The Lighthouse or LIAUG, please write to our mailing address or post on our BBS.

Our address is:

LIAUG
P.O. Box 92 Islip NY 11751

Our BBS number is: (516) 221-8462

If no answer call:. (516) 221-2964 and leave a message.



MINI MIDI LESSONS

by Morris G. Miller

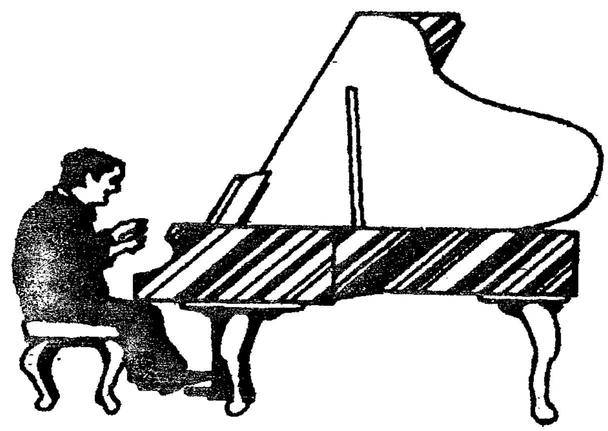
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WHAT IS A SYNTHESIZER ?

A sine wave tone at any frequency is the most pure and undistorted sound we can make; it is much like a bird whistle, when given notes to play. Most instruments have some pure note characteristics. Only some. There is no musical instrument pleasing to the ear which produces sound in the purity of a sine wave. It is the characteristic distortions of an instrument that makes it sound like that instrument and none other.

The trick, then, is to electronically produce sound with the proper distortion and harmonic characteristics in order to sound like some instrument we know and love. Or, for that matter, once we learn to create the sounds of instruments found naturally, and understand the natural laws which govern those sounds, we can create, by those rules of nature, new sounds of instruments not yet devised by craftsmen. Ain't that exciting ?

The English prefixes "syn" and "sym" mean, simply, "together". The word "synthesis" is from the old Greek. meaning "to put together". One way to create distortion in sounds. otherwise pure, is to put two or more of them together with varying amplitudes and phase relationships - and you have the beginnings of a violin, guitar, or piano sound. Add to that control over the amplitude envelopes and it can be quite good.





To give even greater flexibility to the sound synthesis, each tone to be combined (operators) can be given a distortion. The easiest way to do this is to generate the tone in various wave forms (shapes). The most common such wave forms are sine wave (no distortion), square wave (rich in odd numbered harmonics), triangle or peaked wave (weak low-order odd harmonics), sawtooth (rich in both odd and even harmonics). and pulse shapes (harmonic content variable). By mixing the selected operators to various degree, many different sounds can be produced.

To take this process one step further, allow a low frequency operator (LFO), of one of these shapes. to determine the amplitude or frequency modulation of another (the carrier) at the desired note frequency. Add feedback so that the modulator can modulate itself to some degree. Now combine mixes of these signals in various combinations and you have the synthesizers available today.

To make a new voice, select the manner in which you want the modulators, carriers and feedback loops to be intercon- nected (the algorithm). Set the desired range of controlfor each of the operator parameters, and which of the control functions to vary the operator effects, if any. Set output envelope shape parameters and which of the control functions will vary the envelope effects, if any. Then play....

Turbo-Info #2



Where is All of My Memory?

by Chuck Steinman (DataQue)

This is the second part of a multi-part information article on the Turbo-816 from DataQue Software, for the Atari XL/XE computers. The first installment went over the basic system, and this article will explain the various possible types of available memory in a Turbo416 upgraded system.

Because of the limited addressing range of the 6502 CPU used in the Atari 8-bit computers, there have been several techniques used to allow larger programs and more data to be stored. None of these techniques used to date have been efficient, and most are awkward at best. The Turbo416 changes all of that.

Because of a lack of definition in the past of the various ways of describing the many ways the 6502 can address memory, I have made my own definitions as to how the 6502 and Turbo-816 can address memory. I hav, broken memory down into several basic groups. They are described as follows:

Standard: This is the original 64K of memory that the 6502 can directly access without any gymnastics. In most systems, there would be a 16K section dedicated to the ROM space and I/O devices, and the remaining 48K is available for either RAM or cartridges.

Extended: This is the RAM that is available by using a bank selecting technique like the Atari 130XE. Many have upgraded their XL computers to also have a compatible bank selected RAM area. The Turbo-OS includes several routines to manage and report the amount of Extended RAM available. The Extended RAM is used and available exactly like it always has been, so your programs that use the XE banked RAM will still work just fine.

Explicit: This is a 1 megabyte area dedicated for RAM or ROM which is installed by using Turbo-SRAM cards. It can be any mix of either Static RAMs or PROMS. The Turbo-SRAM card is compatible with many common sizes of RAMs and EPROMS. The Turbo-OS checks the Explicit range from $010000 to $07FFFF every 32K for a pattern, to detect whether either ROM or RAM exists.

The reason for dedicating an area for SRAMs and EPROMs was to allow for resident programs to be held in either EPROM, or RAM, and for those programs to optionally also have their own dedicated data RAM. This would allow you to have several different application programs or device drivers installed in the system, and select from those programs without having to load. them from a disk file or insert a cartridge. They would normally be dormant, and would be activated by a system call.

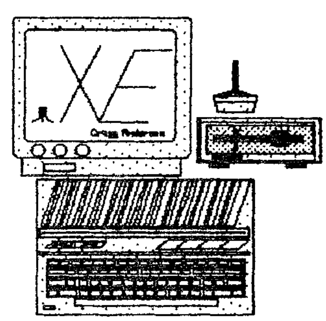
There are several operating system functions which support the Explicit memory. There are routines to allocate and deallocate Explicit RAM. There are also routines to Initialize and Execute application programs that reside in the Explicit memory range.

Expanded: This is an 8 megabyte area dedicated for use by user applications as either data or program RAM. The Turbo-OS will scan the range of $080000 to $7FFFFF to determine how much Expanded RAM exists in a particular system. Also, the RAM can be allocated in 256 byte blocks by applications. This will allow for multiple applications to share the available RAM. There is also a de-allocation routine to return allocated RAM back to the system.

Proto: This is an area defined for the prototyping card, which is available for any user developed applications. No production product should ever use this area. This two megabyte area runs from $800000 to $9FFFFF and is not checked, or used, by the Turbo-OS.

Video: There is a 4 megabyte range of memory dedicated for video adapters, in the range of $A00000 to $DFFFFF. This will allow for multiple video adapters to have their own

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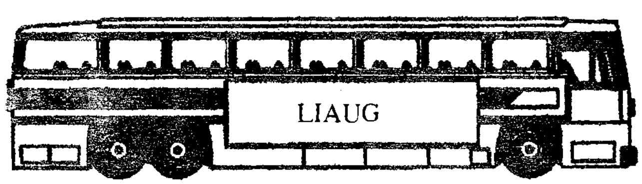


RAM, without conflict. Also, this RAM is specified as dual-port DRAM, so unlike the ANTIC video RAM, no bus arbitration or DMA is required to access the RAM, either by the CPU or Video controllet. This allows the CPU to tun though video refreshes, unlike the current system in which ANTIC halts the CPU while it is reading the video RAM out to the shift registers.

DataQue: This is an area defined for in-house applications and products, and should not be used by any third party or user products. This one megabyte area runs from $E00000 to $EFFFFF and is not currently checked, or used, by the Turbo-OS.

Turbio: This block is reserved for Input/Output (I/O) devices and control registers. It is located from $F00000 to $FFFFFF and can be used by various peripheral cards. There are specific ranges within this spec for certain devices. At this time, the only device that uses this area is the 80-column video adapter.

Other peripherals such as disk controllers, printer interfaces and co-processors would use this area for their access, to allow for maximum compatibility. Each peripheral and its supporting device driver should allow for several different locations, to allow for co-existence with other peripherals and also multiples of like peripherals.



Bit Byter News

Translated by Horst A. Dewitz, International Correspondent for and Member of the OL Hackers, LIAUG and ABBUCe.V.

Here it is, the middle of January, and I have not had a chance to write this article. Anyhow, a Happy, Healthy and Successful New Year to all of you.

As my fellow Atarians and friends at the OL Hackers and LIAUG Users Groups already know, I again was able to attend the annual meeting of the Atari Bit Byter Users Club e. V. (ABBUC) in West Germany. The meeting took place in November in the town of Herten.

The meeting started promptly at 11 AM. After the opening and welcome remarks. Wolfgang Burger, President of ABBUC, had a surprise for me: a collection of PrintShop disks (all PD!) and Icon print outs, neatly bound in a binder. This as a memento, as well as a thank you for my efforts on behalf of the club. It was my turn now to introduce myself and to present greetings from Al Beitschman. President of the OL Hackers and Greg Brown, President of NAPCO (Nittany Atari Personal Computer Organization). Gifts of PD software for ABBUC from the OL Hackers, NAPCO and LIAUG were exchanged as well. A brief question and answer period followed, demonstrating the interest of our West German friends in our club activities and Atari of course.

The proceedings then continued with club elections (all officers were re-elected), treasury reports, old and new business etc.. The meeting ended at about 3.30 PM, followed by a computer show/fair. One was able to view hardware and software projects in the making, displays of programming skills, the ABBUC Mailbox (BBS). Also present were several vendors, selling software, hardware enhancements and publications. It made for an interesting afternoon.

I again became the focal point for the local and regional press, having traveled the farthest to attend the meeting made it something special for them. The fair ended at about 6.30 PM. after which a few members and I. including the club officers, retired to a local pub for food and libations and more Atari discussions.

ABBUC, at the meeting was 630 members strong nation wide. Attending the meeting were about 180 members, with, for the first time, two East German members in attendance.

As usual any questions concerning the Bit Byters or their programs and text files may be directed to me by phone. at meetings or by US Mail (stamped. self-addressed envelope please.) Horst A. Dewitz 1653 Wesley Avenue North Merrick, NY **11566 516 378-0718** (Eves after 7.00 PM)

What to do if you are Infected!

:a review of Virus Killer 3.9

by Bill Pike (PAC)

Review copy loaned by IB Computers

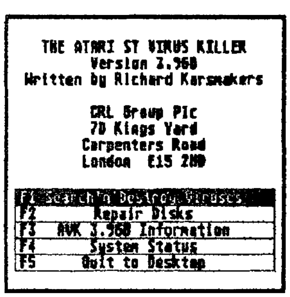
You sit down at your computer and load in your favorite program: all a sudden the cursor starts moving backwards from the way the mouse is moving or a nasty message appears and the disk drive comes on and suddenly you have a Blank Disk or the Hard–Disk starts and the next time you try to access it you get the dreaded "Drive not Responding" error. You have been hit by a virus!. Of course this never happened to me. Ha! Ha! Ha!

After 5 or 10 minutes of stating various unprintable words suggesting the programmers who started this thing should have their mothers bite them next time they pet them and why do we need experimental animals when we have virus programmers. among many other things - What do you do now?

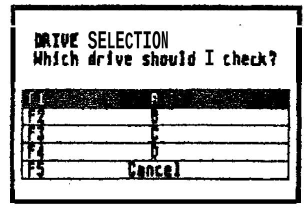
Well, first I hope that you have backups of your disks or have kept up with your hard–drive backups. If you do, are the backups infected? OK, where do we go from here?

Well if you have a Virus Killer program you start by loading the program and checking EVERY DISK you own including the commercial disks. But wait; a lot of the commercial disks along with others have weird bootsectors that a virus checker thinks might be a virus; if you kill the <VIRUS?> on the disk the program is gone too. Do you take a chance that the disk isn't infected and have to redo all the work you have just done? Maybe the virus has infected the disk and

#1.



This is the introductory screen



This is the drive selection screen it is used to select the source drive. You cannot check for bootsector viruses on hard-drives.

destroyed the disk already. You can isolate a virus by only using the computer, with no hard drive, and the disk in question, then turning off the computer when finished and let it stay off for 5–10 minutes to let the memory clear. However the virus can still kill that disk.

What is needed is a program that can recognize various types of bootsectors and say that these are OK or INFECTED. Even better how about a Virus Killer program that will take a look at a un-recognized bootsector and make a educated guess if it is OK or INFECTED. What about even being able to rewrite the bootsectors of commercial disks that have been INFECTED so you can RESTORE the INFECTED disk. How about being able to repair non–commercial disks that have had the bootsectors wiped out.

Do you want more? Why not be able to check for Link Viruses. Those are viruses that attach themselves to programs already on your hard disk or floppy disks (not as likely) and cause various nasty problems including messing up document files and data files and formatting disks.

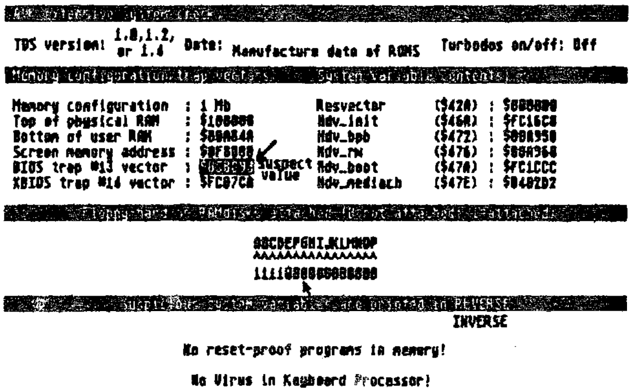
OK, now that I have built up all the expectations. I have good newsl There is a program that will do all this and more.

It is called "Virus Killer" and is published by the CRL Group. The cost is $24.95.

This program started out as VDU (Virus Destruct Utility). The original of this program came from Germany and Holland. The first commercial version of the program was 3.00; those before that time are public domain. The program is now in version 3.9 .

The program is now in a compressed format for faster loading and to make it more difficult for the virus programmers (may they be sealed in a barrel of doggy do do) to get around the program by finding out what it checks. Virus Killer now recognizes 256 different bootsectors, it will recognize 27 different bootsector viruses, it will recognize 5 different link viruses. and it can repair 184 different bootsectors. It will also immunize disks so that viruses will not write themselves to your disks, [this cannot be done to

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commercial self-booting programs as the immunizing process writes to the bootsector and will kill the disk]. For commercial programs you must use the bootsector repair section of the program and keep them virus free by using them by themselves with no other storage media (hard-disks or floppy disks) present in the system.

Virus Killer also will check the computer itself to see if a virus is present, However, to get a real check the computer must be tebooted with only the Virus Killer present in memory, as the program checks for the factory settings, not anything that you have reset thru Hard-Drives and other resident programs. The program even checks the keyboard ram and looks in memory for any reset proof programs (these could be viruses). This is sort of self defeating as when you cold-boot the computer the viruses are destroyed.

Another way is to hit the reset button and let a COPY of Virus Killer load, then run the program. This way, if a virus is present. it will show up. A different way is to be certain that the computer is booted "virus free" with all your normal programs in it (check each disk that you boot in first to be sure that it doesn't have a virus. Then run the system statistics section of Virus Killer. The program will look at the various system vectors and check for reset proof programs. The system addresses displayed in inverse are ones that are not normal for a bare-bones ST/Mega. Record the inverse numbers (if any) that you are shown. Next time you run the System Statistics just check these numbers against the ones that you wrote down. if they have changed then you might have a virus in your system and will need to trace down why the numbers have changed.

The program will check entire hard-disk partitions for link viruses in seconds. It really screams. Here I found one of the problems with the program. It cannot check the bootsector of the hard disk for a virus.

However this isn't a large problem since AZT is available shareware. AZT reads the bootsector and generates a checksum for it. It also reads any other files that you want protected and generates a checksum for them. The program saves these values along with the files that generated them to a file. Each time the hard-drive is booted the program generates a checksum for the bootsector and the other protected files and compares it to the stored value. If the values are different then the information in the files has been changed, either by drive problems or a virus.

The documentation is contained on the disk and is very extensive and easily readable. It even gives you the various virus types, a guess where they came from'and what they do along with when and where they were first found. There are also several sections for the advanced user going into more depth.

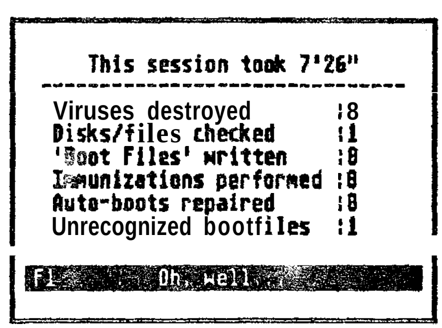
The documentation is 26 pages long so have enough paper in the printer, it is too long to try to read on the screen, at least for me.

This is the most complete program that I have seen to clear and keep your system clear of viruses. It is quite easy to use.

It uses either the mouse click and point, or the function keys to walk you thru the menus. The program even tells you what virus you have been infected with. You will still have to check each disk one by one but the program is quite fast. I would STRONGLY SUGGEST that you use the write protects and also immunize your disks to keep a virus infection from spreading to your entire library before finding out that you are infected. You are also able to recover those damaged commercial disks that the program has data for. if the only problem is a bad bootsector. Even if you are only able to recover one commercial disk the program has paid for itself. It is also a very good idea to check ANY NEW disks that you get even if they are commercial, these have also been known to have viruses on them. Practice Safe Computing use Virus Killers!

The Atari ST Virus Killer from CRL Group

cost $29.95



AtariWriter+ for Those Who Don't Want to Read the Book -- Part V

by Jimmy Boyce (CACE)

Hi people! How's the old heater doing? Are we having fun yet in this cold? You say, "Who cares, just tell me how to create my own personal dictionary?" My, my...aren't we edgy?

Why a personal dictionary? Mainly because AW+'s dictionary is so small. Another reason is that you may have a specialized vocabulary. An electronics technician, dentist, inventor or teacher of a special subject will each have need for a personal dictionary. If you have more than one specialized subject, you can make a dictionary for each subject.

Creating a Personal Dictionary using Corrected Words

There are two ways of going about this process. You can run a document through the spell check and then go back to menu and select FILE PERSONAL DICTIONARY or you can just create a list of words and save them.

So, let's see what is involved in saving words from a document that you have just checked for spelling <pg 57>. Keep in mind that as you are running a file through the Proofreader and you tell the computer to accept as correct a corrected word, that word is maintained in memory. When you are returned to the menu, press the key that gives you the File Personal Dictionary function in order to save this list of words (the list in memory).

At this point the computer will prompt you for a file name. I like PERDIC followed by a number, such as PERDIC1 or PERDIC2. This way, if you exceed the maximum allowed words (256 words per personal dictionary file), you still have continuity with the dictionary.

Now, insert a formatted disk (you know how to format a disk for AW+) into your drive and hit [RETURN]. If the file exists, you will be asked if you wish to replace the old file, if not press [N] and start over with a new name for your file.

Here is the nifty part of this whole rigmarole (that ought to mess up the Proofreader but good) -- you will be prompted with SELECT WHICH WORDS TO STORE? YIN. If you select [Y], you can choose the words, letters, abbreviations and numbers that you wish to save. Each time a word flashes on the screen you will be asked if you wish to save



it. Just type a [Y] or [N] to save or discard each word.

Now that you are done with the list, you are asked to press [RETURN] TO CONTINUE. I assume you can follow directions and you did indeed press [RETURN]. You will notice that your drive started running. Guess what? Your new personal dictionary is being saved.

Please remember that if your list is OVER 256 words long ONLY the first 256 words will be saved. If you have a list of over 256 words, save it as a regular AW+ file and split it up with the "saving a portion of a file" technique mentioned on <pg 28>. Then save it to your Dictionary disk (that will be discussed next).

If you type an [N] when asked SELECT WHICH WORDS TO STORE? Y/N, the entire list is saved and that is the end of the procedure.

Building a Dictionary Manually

Let's say that you already know that the technical terms you will be using are not in the AW+ dictionary, and you want to get a jump on things and create your own files without using the previous method. Here it is folks: first create a file containing all the specialized words you use. Your options are to create a column with a [RETURN] after each word or just type them with a space between each word. Then, just save this as you would any file, but put it on your dictionary file disk with an appropriate file name. Isn't that just precious!

There are a few ground rules and they are quite simple to deal with. Start each word with a letter. Do not use punctuation marks, parentheses, or numbers at the beginning of a word. Proofreader will accept ['] in a contraction such as "he'll" or "aren't." Do not enter contractions that show possession such as "she's." Also, remember that your dictionary can contain up to 256 words (130XE owners — your list can be up to 628 words).

Using a Personal Dictionary

Let's move on to proofreading with personal dictionary files

<pg59>. Go to the main menu and gently depress the [V] key to verify the spelling of your document. Remember, when it says to insert the program disk and press [RETURN], in reality it means leave the AW+ program disk in your drive because PROOFREADER is on that side of the disk.

When the PROOFREADER menu appears on the screen, you must gently strike the [A] key to add your personal dictionary. Now that was not too bad was it? Oh, I almost forgot...you must type in the name of your dictionary file (I use PERDIC1) at the prompt at the bottom of your screen and hit [RETURN]. This gets your part of the dictionary into memory so you can use it.

At this time, if you have another dictionary to load then do so. because you should be back at the menu with a notice telling you how many words you loaded last time and asking you to make another selection from the menu. Just repeat the process and the next list of words is loaded.

If you try to load more words than there is alloted memory space for, you will be told that you goofed with a terse little message saying MEMORY FULL — INCOMPLETE LOAD. However, if you have been fortunate and all has gone well, ask the computer to correct your spelling by depressing the [C] key and inserting the AW+ dictionary disk in your drive (don't try to jam that disk in without removing the other one first!).

Updating A Personal Dictionary

OK, you have corrected your sloppy spelling and keyboard work. Mow let's update that dictionary disk. As a reminder <pg57>, each time that you correct the spelling of a word that is not on the regular dictionary disk, that word is saved in memory. These words can be added to your personal



dictionary when you have completed your spell-checking in the following way: when you have completed spell-checking and have been returned to the Proofreader Menu, depress the [F] key for File Personal Dictionary and you will be asked for a filename.

At this point, let me tell you a little something I discovered about this process. For some reason if you save your dictionary file with the same filename as before, you will have a double list of your words in that file. So, here is what I do to eliminate the problem:

Step 1 Save the file with another name (e.g., PERDIC2 assuming that your original file was called PERDICI.

Step 2 Delete the original file (PERDIC1).

Step 3 Reload PERDIC2.

Step 4 Save PERDIC2 with the new name PERDIC1.

Step 5 Delete PERDIC2.

This may sound like a bit much, but it will leave your disk uncluttered. Plus, it will make it easier to load your personal dictionary next time, because you will not have to remember which file is which.

The next thing you will be asked is if you want to select the words you want to save. I always tell it [Y] just so I can eliminate anything I do not wish to have on the disk. One final note: save the file while in the Proofreader program because some of the 130XE's do not respond when returning to AW+ and your corrected file is lost upon re-booting AW+.

That's about the sum and substance of checking out your spelling. Remember that your personal dictionary is limited to 256 words (130XE owners the limit is 628 words). That's it for now. Next month, we start printing the corrected file that you have just saved.

First Impressions of the Atari STe and TOS 1.6

Continued from **July issue**

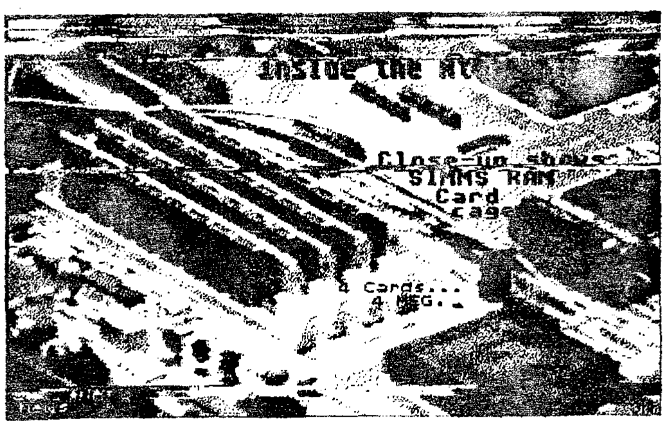
by Darek Mihocka, Branch Always Software. (C) 1990.

(This part gets technical, so if you're not a programmer, skip it)

It seems that Atari may be planning a 68020 or 68030 upgrade for the STe. The ROMs are coded to be compatible with any 680x0 chip. That is, they support both the 6 byte exception stack frame of the 68000, and the 8 byte frame found in the 680 10120130. Hooray! TOS 1.6 should run unmodified on a 68030. I hope somebody at Atari has tested this.

The 1% slowdown in BIOS is probably a result of the extra lines of code required to test a new OS variable _longframe at $59E. which indicates whether a 6 or 8 byte frame is being used. A quick look at the trap #1 handler gives a good idea of how to write CPU independent interrupt handlers, which should also run on the TT.

Also changed are line F calls. There are none! This means that TOS is slightly larger than before, but could also be faster. This could be why GEM is so much faster. Even Quick ST speeds up by about 10%. But TOS longer fits into 192K. The ROMs have been relocated from $FC0000 to $E00000. The OS variable _sysbase at $4F2 points to the start of the ROMs, and programs (such as UIS 11 or DC ShowIt) that assume that the ROMs are always at $FC0000 will fail to run unless patched for the new location. In fact, trying to access the old memory locations will generate a bus error and crash the system. TOS now uses 256K, of which only about 200K is actually code and the rest is empty.



Another problem with the removal of line F calls is that certain programs that depended on hooking the line F vector will not run properly, such as Hotwire. Although Hotwire still runs if double clicked from the desktop, the Codeheads tell me that it will not be possible to install it as an AUTO folder program or use the hotkey feature until they fix up Hotwire for TOS 1.6. A patch program is required in any case, and I'm told it may already be out by the time I upload this file.

Other TOS version dependent programs may also fail under TOS 1.6, and may required either patches or upgrades.

(If you're not a programmer, skip to here)

While on the subject of compatibility, my dealer tells me that Populous doesn't run on the STe. Too bad, how sad. (I'm not a big fan of video games as you can tell).

Otherwise, everything else I tried ran fine on the STe, if not faster. The STe has a built in blitter chip, which is a big plusfor all the 1040ST owners like myself who have been waiting for 4 years for Atari to deliver the blitter upgrade they promised when the 1040ST was first released. Software accelerators will still provide a bigger speed increase than the blitter, but heck, if it's free, take it.

I took the patch cords from the back of my tape desk and plugged them into the left and right audio jacks on the back of the STe. Sure enough, the keyclicks as I'm typing this now are coming out both channels of my stereo. Reminds me of the old Atari 800 days when I did the same.

So what about this new digital stereo sound? Well, since Atari has not yet shipped any documentation for the new hardware. I took out the debugger again and just scanned upper memory for new undocumented hardware registers. I found the blitter chip at $FF8A00, and sandwiched in between the sound chip and blitter chip, at $FF8900, was the new digital sound chip.

All I had to go on was a recent magazine article which said what the new hardware is supposed to do. So, knowing what to look for and after several hours of poking around. I finally got it to play digitized sound files (such as the SATAN.SND (the Church Lady) file downloaded from GEnie).

Here's the scoop on the hardware...

(technical stuff again)

$FF8901 - this is the location that starts a sound.

bit 0 = store a 1 to start playing, 0 to stop

Continued on page 11

Liaug 1990 Meeting Dates

Jan 6	July 7
Feb 3	Aug 4
Mar 3	Sept 8
Apr 7	Oct 6
May 5	Nov 3
June 2	Dec 1

ANNOUNCING

8bit Public Domain Disks

Please see our new 8-bit librarian, George Leek, for the latest listing of PD disks. We are constantly adding new items to the library.

PD008...................... Ramblin' Gamblin'

5 different games - Roulette, Seven Card Stud. Slot Machines, Blackjack & Horse Race.

• PD031.............................. Turbo Basic

Works on XL and XE computers only. A fine Public Domain Basic Interpreter. 100% compatible with Atari Basic. Runs Atari Basic Programs 3 times faster. Complete docs and demo included on disk.

• PD034................................ TEXTPRO

The best Public Domain word processor for the Atari 8-bit. Includes complete documentation.

• BRE048A........................ Copymate 4.3

Sector copier automatically adjusts to memory size and disk drive density. Works best with US Doubler.

News

16 bit Public Domain and Shareware software

• Clip Art #5 CN239 LIAUG #34

Holiday and Headers, 28 screens full of great clip art

• Cyberscape CN 173D LIAUG #56

Animated graphics demo from Antic. See disk transform into spaceship, fly into and explore the Atari ST. Requires 1meg and double-sided drive.

• Orbit CN315 LIAUG #64

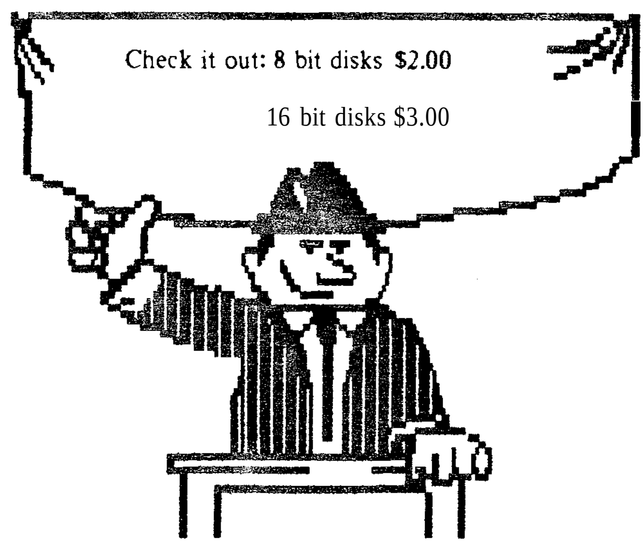
Arcade game similar to Breakout and Arkinoid. Design your own screens,

• LDW Power Demo CN301D LIAUG #46

Demo of LDW Spreadsheet program. Includes auto macro to show off LDW features and folder of various VIP/ LOTUS/LDW templates. Requires doublesided drive.

Spectrum Pics #7 CN393D LIAUG #57

20 Spectrum pictures. Color monitor & double-sided drive.



bit 1 - a 1 in this bit will keep playing the sound over and over again

while a 0 only plays it once

bits 2 and 3 - they do something, but I don't know what!

bits 4 thru 7 - seem to be unused

$FF8903, $FF8905, $FF8907 - similar to the video chip. this is a 24 bit starting address of the sound sample. High. medium, and low bytes.

$FF8909, $FF890B, $FF890D - again, as with the video chip, this location gives you the current byte that the chip is processing. This is a read only location.

$FF890F, $FF8911, $FF8913 - this is the 24 bit ending address of the sample. Note that both the starting and ending address must be even, and be in the range $000000 to $3FFFFE. If you store larger numbers. the upper bits are just ignored.

$FF8920 or $FF8921 - this controls the speed of the sampling. as well as the mode (stereo or mono). According to the article, you are limited to only 4 speeds - 50 kHz, 25kHz, 12.5 kHz, and 6.25 kHz, and sure enough, that's what I got.

bits 1 and 0 - this selects the playback speed of the sound samples.

0 is slowest, 3 is fastest,

bit 8 - store a 1 to play mono and 0 to play stereo.

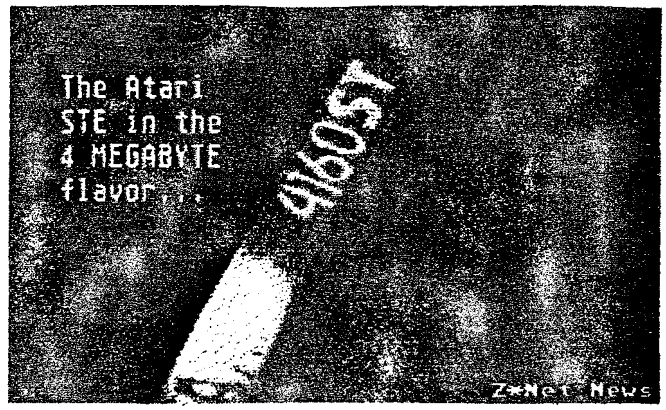
$8924 or $8925 - these two locations just seem to act as RAM. Can't figure them out.

(end technical **stuff)**

So how does one use the chip? First, you load a sound sample into memory. It can either be a standard .SND file. which simply contains a stream of 8-bit sound samples, or a stereo file (which I guess don't exist yet except for the ones I've created) which contains a stream of alternating left and right channel samples. Then you store the starting and ending location of this sound sample into the above hardware registers. select a playback speed and mode, and poke $FF into $FF8901 to have it play over and over again.

Some sound files may have to be slightly modified, depending on whether the sound samples are signed or unsigned 8-bit numbers.

The sound is played using DMA. so it takes absolutely no time away from the 68000 and allows other programs to play in the background. I modified the SATAN.SND file so that it is in stereo, with the right channel being several seconds



behind the left channel. Then I stuff that into the AUTO folder with a small TSR to load the sound sample and start playing it. and off it goes, saying "Could it be.. Satan?" over and over again.

Yes, it gets boring after a while, but it does show quite a potential for new multimedia software products. The sound quality is much better than that of the currently available sound players which try to play .SND files through the monitor speaker. 8-bit sound is roughly the same quality as AM radio, except the frequency response can be much higher if you sample faster.

I took our home-built 12-bit audio sampler and was able to play back files easily. The only drawback of using a 12-bit or 16-bit sampler is that the raw sound file will contain 16 bit samples, so when played back in stereo mode. the left channel will play back the sound, and the right channel will have garbage. But it is easy enough to convert from one format to the other.

On to video! The new video hardware contains two new registers which reminds me a lot of the Atari 800 video hardware.

The screen memory position is now a full 24-bit address. Video memory can be relocated anywhere within the 16 megabyte address space of the STe, and even wraps around at SFFFFFF. The locations $FF8201, $FF8203, and $FF820D make up the 24 bits. The starting location can be any even address, which allows for "finescrolling" of 16 pixels at a time.

The other new register is $FF820F, which tells it how many words to skip at the end of a scan line. Normally set to $00, you can store any value up to $FF into this register. and create a virtual screen that much bigger. For example. storing a value of $28 in monochrome will shrink the screen down to half its height.

☞

What purpose does this register have? Well, in the good old Atari 800 days, techniques such as this were available with display lists, and it allowed for smooth screen scrolling in all directions, without having to actually move any memory. This allowed for some very smooth and fast video games (Eastern Front is a good example).

One non-video game application that I see is a large screen emulator. Currently there is a pld program available called BIGSCREEN, which allows a 640x400 monitor to emulate. for example, a 1280x960 Moniterm monitor. The drawback of this software so far has been that the window scrolling had to be done totally in software by copying large amounts of screen memory every second. When running BIGSCREEN all programs run about 30% slower and not as smoothly. On the STe, this can all be done in hardware with no speed loss. Look for this feature in the next release of Quick ST.

A few more comments about the machine in general. The power supply seems to get a lot hotter than on the ST. Although both my ST and STe are both rated at .8A, the ST has never heated up as much. I realize that the STe probably draws more power due to the extra hardware, but I have always been in the habit of leaving commonly used floppies right on top of the computer. I will probably stop to do this because of the excessive heat coming out of the left side of the machine. My 1040ST has lasted for almost 4 years without a hitch, so I hope the STe won't fry too soon.

Another thing I noticed is that Flash now toggles screens EVERY time I click on the right mouse button, which of course is how it's supposed to work. On earlier versions of TOS. I sometimes have to click the right mouse button several times for it toggle.

Menu bars still have the problem of appearing to lock up if the mouse if moved out of the menu too quickly.



The keyboard is a bit flaky as before. It feels a little bit stiffer than the one on my 1040ST, but it still has the same problems with pressing too many keys at once. Unlike a PC keyboard, the ST cannot detect when more than 2 or 3 keys have been pressed, and when you do press a few together, it generates the wrong keystroke.

Then there are the new joystick ports. They are two 15-pin connectors, like the ones used in VGA cards. According to the STeaddendum, each port has enough pins to support two joysticks and a paddle, giving a total of 6 joysticks and 2 paddles for the whole machine, and as the. manual says, it can even support a light pen. Once again. memories of the Atari 800 fill my eyes with tears <grin>. I don't know where one gets the 15 pin to 9 pin conversion cables, or how to read these new joysticks from software. but who cares. If you want a game machine, buy a Ninrendo.

Well. that about wraps it up. The STe at the current prices is definately a great deal if you wete planning to upgrade your existing ST. I'd recommend to anyone who currently has a 520ST or 1040ST to dump your old machines while you can still get any money for them, and buy an STe. Not only can you very possibly make a PROFIT on the deal, but you also get a blitter chip and TOS 1.6 to boot.

As for buying an STe if you don't already own an ST and haven't invested a lot of money in a system. well, I wouldn't be too quick to recommend it. Regardless of what ST owners may think of PCs and Macs, there are good qualities in each. I prefer to use a PC for doing any sort of word processing or spreadsheet work, just because the PC software is still years ahead of ST software. And I've seen some amazing graphics and digital sound hardware for the Mac II, but I can't afford it. The 68000 is still my favourite chip for programming, but most people aren't programmers, and Atari's future isn't bright yet.

Probably 99% of the software that runs on TOS 1.4 will run on TOS 1.6, and the possibility of a 68020 or 68030 upgrade for it sounds very appealing. This may turn out to be a very low end TT, something that most of us would be able to afford.

I like the new sound chip a lot. I like the new video hardware a lot. The only question is, will future software be written specifically for the STe, or for the ST (and thus be STe compatible) or are we going to see separate versions for both? I can really only see this affecting video games in the neat future, but the ability to have high quality digital sound will definately open the door to a new type of software. Already on the Mac II, CD-ROM players are being used for some multimedia (the buzzword of the 90's) products.

☞

If Atari ever decides to ship their silly CD-ROM player, it might even be possible to take ordinary audio CDs, load sections into the STe's memory. edit the sound samples. and play them out the audio jacks. Certainly, all of the cheap 8-bit digitizers already out for the ST will be able to play the sounds samples back at very high quality. It should even be possible to wire up a resistor network to combine the left and right channel outputs and create a CD quality analog output. Who knows. maybe the chip already does that.

I also wonder how soon it will be before some of the hardwareaccelerators and boards like PC-Ditto 11 will be available for the STe. Although I haven't taken the machine apart, yet. I have heard that the chips are all different shapes and this should make it really fun for the board makers.

But I can't help and wonder what Atari really has planned, if anything (that could be asking too much of them). Is ?his machine just an Atari-800-wanna-be which will be nothing more than a very advanced game machine, or is this machine only intended to take away some Amiga sales (I'm sure it is), or does Atari really plan to exploit the new features?

Who will release the first 68030 board for it? Is it possible to modify an existing ST to relocate the ROMs so that TOS 1.6 can be used on any ST?

Will Atari ever release docs on the STe or is it up to users to figure it out for themselves? Most of Atari's documentation has been pretty lousy so far. How soon before the 520ST and 1040ST are totally phased out? Why does the STacey (which hasn't even shipped yet), still use TOS 1.4? If Atari is planning to phase out the old STs, then the STacey certainly isn't going to help. And if the STacey is being aimed at musicians, then why didn't they include the new sound chip on it? Will the new sound and video hardware be available as an upgrade to existing STs? Since they never did come out with the blitter upgrade, I would guess not, unless a third party does it.

Well. I'm sure these questions will all be answered soon enough whenever the STe finally hits the U.S. market. I can finally stop complaining and get to work on the STe Xformet <grin>.

- Darek

Don't forget to renew your membership

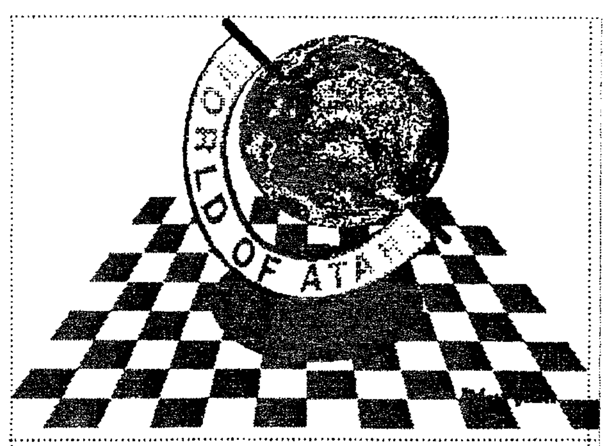
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Current BBS numbers

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A-BUG	215-779-7859
LVAUG	2!5-261-0620
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NEAT	TBA
RACE	516-221-8462
SPACE	TBA
BIT BYTERS	516-221-8462

The North East Atari Regional Users Support Group is an alliance of Atari User Groups throughout the Mid-Atlantic Region. In addition ties have been made with user groups in Germany and Canada. The intention of the Support Group is to provide a network for communications between people who would not ordinarily get together but who share common problems and concerns. Through a BBS network and a planned newsletter. we will have a broad base of users to discuss and solve problems.



LIAUG Minutes of 6/02/90

John Aalto opened the meeting at 12:40 p.m. Harvey Schoen informed the group that he had an extra 2 megs of memory installed in his Mega 2 for $270.

John reported that the NEARUS regular meeting would be June 16th (a saturday) in New Jersey at the Bell Labs: that we need action for publicity. On that point, he noted that Current Notes was going to let users whose group had sent in their club name subscribe to it for $20, adiscount from the regular rate of $24. A suggestion was made that Current Notes and NEARUS should get together. "The Revolution" is getting publicity before the public.

Terry informed us that Atari was very big in Australia and New Zealand. He said that there is a need for the magazines to keep groups going snd that users groups, while advertising on GENIE. are not apparently advertising elsewhere. If the 8-bit is to keep going, it has to be supported by the user groups and get word out to the owners through all channels possible. In the argument over whether one should purchase an 8-bit or 16-bit, Terry said that he wanted developers to know that there are user groups out there who would buy software and that NEARUS should be alerting the developers.

Harvey said that if copies of user group newsletters are sent to Current Notes, it will keep its list up-to-date. Mark said that he would put the information on all the BBS's he could reach on Long Island.

Randy Constan then arrived with mail from the Post Office box. This included the NEARUS listing of users groups and an accompanying letter. He read the letter which informed us that he was the 'contact person' for LIAUG. Mark said that Pat Mulvey had received a letter regarding the software NEARUS has been preparing for the BBS network. Terry and John will be attending the NEARUS meeting on June 16 and will be taking a videotape of Terry's new board - STarSCAN.

John reported the opening of Island Computer's new store.

Pat Mulvey reported that he had bought the new 2400 baud modem for the BBS. Randy reported that the treasury was still solvent.

George Leek reported that he was having difficulties with the library as he had not been able to make the conversions of the Print Shop graphics. He would bring the disk along next month to try at the meeting. Joy offered to copy some disks for him, to help get the library running again.

Harvey reported on shareware for the ST. For those who want to know the latest, there is a reviewzine available called the Shareware Connection from Computer Publications Unlimited, P O Box 2224, Arvada, Colorado 80001

Terry reported on British magazines. Pat Mulvey reported that the board went to the 2400 baud almost a month ago and explained the system that NEARUS would be using.

Mark Glicksman showed a list of BBS's in the 516 area. and left copies. He will have sufficient for all members at the July meeting. Should a member call one. helshe should mention LIAUG. The meeting broke for lunch at 1:55 p.m. and resumed at 3:30 with Harvey Schoen demoing TrackerST, a mailing program. Harold Jagendorf demonstrated Light Speed C, a compiler for 64k 8-bits.

The meeting closed with general discussions of compilers and C.

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bong Island AUG

Some BBS's in 516 area

Arena- 579-2067
24 hrs 2400 baud

- God's Playland
579-9738 24 hrs
1200 baud

- Mega Party
Palace ST 791-4556
24 hrs 2400 baud

- The Gull
254-6769 24 hrs
1200 baud

LONG ISLAND ATARI USER GROUP

MEMBERSHIP APPLICATION

To apply for LIAUG membership fill out the following application and bring It to the next meeting, or mail it (including check or money order) to:

The Long Island ATARI User Group
P.O. Box 92
Islip, New York 11751

The current dues, which includes a subscription to our newsletter, is $20 per year. Kindly make your check payable to The Long Island Atari User Group.

First name: ______________________ Last name: ______________________

Address ______________________

City: ______________________ State: __________ Zip: __________

Phone #: ______________________

Your system (please be specific):

Computer. 400 600 800 800XL 65 130 520 1040 **MEGA**

Memory: ________ K Cassette: ________ Disk drives ________

Modem: ________ Interface: ________ Printer ________

Other ______________________

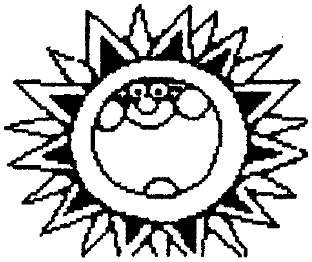
What languages are you familiar with? ______________________

____

In what areas would you like to learn more about your computer system? ______________________

____

For Liaug use only: Rec'd ___/___ ___ Amt ________ Dx ___/___/___ TYL: ___/___/___ Card Y/N ML Y/n Mail / BBS / Meet





Okay, it's hot! So what did you expect this summer. Our meeting room is air-conditioned. Also, you can meet some interesting people and see some interesting things being done with Atari computers. Our next meeting is Sept. 8,1990.

The LIAUG Lighthouse
P.O. Box 92
Islip, NY 11751

First **Class** Mail